

142
SB
942
J6

Journal of

INVERTEBRATE PATHOLOGY

Published under the Auspices of the Society for Invertebrate Pathology

Volume 17, 1971

Editor-in-Chief

THOMAS C. CHENG

Editorial Board:

MAX BERGOIN

F. T. BIRD

JOHN D. BRIGGS

MARION A. BROOKS

S. Y. FENG

SIDNEY S. HERMAN

ALOIS M. HUGER

B. HURPIN

PHYLLIS T. JOHNSON

SHIGEMI KAWASE

MARSHALL LAIRD

JERZY J. LIPA

J. D. PASCHKE

GEORGE O. POINAR, JR.

VALERY P. PRISTAVKO

HARVEY RABIN

HAROLD W. ROSSMOORE

LESLIE A. STAUBER

Y. TANADA

T. W. TINSLEY

MARENES R. TRIPP

Founding Editor: EDWARD A. STEINHAUS



ACADEMIC PRESS
NEW YORK and LONDON

Copyright ©, 1971 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, by retrieval system, or any other means, without written permission from the publishers

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 17

NUMBER 1, JANUARY 1971

SPECIAL NOTICE: NOMENCLATURE

VICTOR SPRAGUE. <i>Plistophora</i> Labbé, 1889, Is a Junior Synonym of <i>Pleis-</i> <i>tophora</i> Gurley, 1893, and Should be Discarded.....	1
JOHN G. STOFFOLONO, JR. Darkening of the Anal Organ of Larvae of <i>Musca</i> <i>autumnalis</i> and <i>Orthellia caesarion</i> When Parasitized by the Nematode <i>Heterotylenchus autumnalis</i>	3
R. P. JAKUES. Tests on Protectants for Foliar Deposits of a Polyhedrosis Virus.....	9
M. M. BARRY, P. P. YEVICH, AND N. H. THAYER. Atypical Hyperplasia in the Soft-Shell Clam. <i>Mya arenaria</i>	17
GORDON E. MOORE. Mortality Factors Caused by Pathogenic Bacteria and Fungi of the Southern Pine Beetle in North Carolina.....	28
J. W. VANDERMEER AND T. A. GOCHNAUER. Trehalase Activity Associated with Spores of <i>Nosema apis</i>	38
W. C. RICHARDS AND Y. HAYASHI. Effect of Some Organic Solvents on the Cytoplasmic-Polyhedrosis Virus of the Forest Tent Caterpillar, <i>Mal-</i> <i>cosoma disstria</i>	42
H. D. SOLOGIC AND J. G. RODRIGUEZ. Microorganisms Associated with the Two-Spotted Spider Mite <i>Tetranychus urticae</i>	48
CHARLES S. RICHARDS. <i>Biomphalaria glabrata</i> Genetics: Spire Formation as a Sublethal Character.....	53
ROSALIE WATKINS. Histology of <i>Rhodnius prolixus</i> Infected with <i>Trypanosoma</i> <i>rangeli</i>	59
ROSALIE WATKINS. <i>Trypanosoma rangeli</i> : Effect on Excretion in <i>Rhodnius</i> <i>prolixus</i>	67
DURI RUNGGER, MARISA RASTELLI, ELISABETH BRAENDLE, AND R. G. MAL- BERGER. A Viruslike Particle Associated with Lesions in the Muscles of <i>Octopus vulgaris</i>	72
ROY E. McLAUGHLIN, M. R. BELL, AND G. B. McREYNOLDS. In Vitro Pri- mary. Culture of Embryonic Cells from the Boll Weevil, <i>Anthonomus</i> <i>grandis</i>	81
WAYNE M. BROOKS. The Inflammatory Response of the Tobacco Hornworm, <i>Manduca sexta</i> , to Infection by the Microsporidian, <i>Nosema sphingidis</i> ..	87
PHYLLIS T. JOHNSON AND FAYLLA A. CHAPMAN. Comparative Studies on the In Vitro Response of Bacteria to Invertebrate Body Fluids. III. <i>Stichopus</i> <i>tremulus</i> (Sea Cucumber) and <i>Dendraster excentricus</i> (Sand Dollar).....	94
R. WÄGER AND G. BENZ. Histochemical Studies on the Nucleic Acid Metabo- lism in Granulosis-Infected <i>Carpocapsa pomonella</i>	107
Y. TANADA AND T. HUKUHARA. Enhanced Infection of a Nuclear-Polyhedro- sis Virus in Larvae of the Armyworm, <i>Pseudaletia unipuncta</i> , by a Factor in the Capsule of a Granulosis Virus.....	116

NOTES

YOSHINORI TANADA AND HITOSHI WATANABE. Disc Electrophoretic Patterns of Hemolymph Proteins of Larvae of the Armyworm, <i>Pseudaleitia unipuncta</i> , Infected with a Nuclear-Polyhedrosis and a Granulosis Virus.	127
DONALD L. HOSTETTER. A Virulent Nuclear Polyhedrosis Virus of the Cabbage Looper, <i>Trichoplusia ni</i> , Recovered from the Abdomens of Sarcophagid Flies.	130
RICHARD F. SMITH. Juveno-mimetic Effects of Lannate in Sublethal Doses on Western Spruce Budworm (<i>Choristoneura occidentalis</i>).	132
ALOYSIUS KRIEG. Concerning α -Exotoxin Produced by Vegetative Cells of <i>Bacillus thuringiensis</i> and <i>Bacillus cereus</i> .	134
ASHOK K. RAHEJA AND MARION A. BROOKS. Inability of the Forest Tent Caterpillar, <i>Malacosoma disstria</i> , to Acquire Resistance to Viral Infection	136
KRISTINA MADZIARA-BORUSIEWICZ AND O. LYSENKO. The Mechanism of Pathogenicity of <i>Pseudomonas aeruginosa</i> . VII. The Influence of Toxic Proteinase on Hemocytes of <i>Galleria mellonella</i> .	138
SIDNEY S. HERMAN, BRUCE C. COULL, AND LAURENCE M. BRICKMAN. Infestation of Harpacticoid Copepods (Crustacea) with Ciliate Protozoans.	141
BOOK REVIEW.	143
ANNOUNCEMENT.	144

NUMBER 2, MARCH 1971

K. S. NAIDU. Infection of the Giant Scallop <i>Placopecten magellanicus</i> from Newfoundland with an Endozoic Alga.	145
W. A. L. DAVID, SUSAN J. ELLABY, AND B. O. C. GARDINER. Bioassaying an Insect Virus on Leaves. I. The Influence of Certain Factors Associated with the Virus Application.	158
J. E. HENRY. <i>Nosema cuneatum</i> sp. n. (Microsporidia: Nosematidae) in Grasshoppers (Orthoptera: Acrididae).	164
MICHAEL C. MIX AND ALBERT K. SPARKS. Repair of Digestive Tubule Tissue of the Pacific Oyster, <i>Crassostrea gigas</i> , Damaged by Ionizing Radiation.	172
W. A. L. DAVID, S. E. CLOTHIER, M. WOOLNER, AND G. TAYLOR. Bioassaying an Insect Virus on Leaves. II. The Influence of Certain Factors Associated with the Larvae and the Leaves.	178
FRANK O. PERKINS AND MICHAEL CASTAGNA. Ultrastructure of the <i>Nebenkörper</i> or "Secondary Nucleus" of the Parasitic Amoeba <i>Paramoeba perniciosus</i> (Amoebida, Paramoebidae).	186
C. M. SPITTSTOESSER AND F. L. McEWEN. Field Evaluations of Nuclear Polyhedrosis Viruses from the Cabbage Looper, <i>Trichoplusia ni</i> .	194
NAOMI KISLEV, MARVIN EDELMAN, AND I. HARPAZ. Nuclear Polyhedrosis Viral DNA: Characterization and Comparison to Host DNA.	199
M. KUČERA AND O. LYSENKO. The Mechanism of Pathogenicity of <i>Pseudomonas aeruginosa</i> . VIII. Isolation of Hemolymph Proteins from <i>Galleria mellonella</i> Larvae and Their Digestibility by the Toxic Protease.	203
M. KUČERA. Toxins of the Entomophagous Fungus <i>Beauveria bassiana</i> . II.	

Effect of Nitrogen Sources on Formation of the Toxic Protease in Submerged Culture.....	211
DAVID A. ARMSTRONG, JANET L. ARMSTRONG, STUART M. KRASSNER, AND GILBERT B. PAULEY. Experimental Wound Repair in the Black Abalone, <i>Haliotis cracherodii</i>	216
W. A. L. DAVID, SUSAN J. ELLABY, AND G. TAYLOR. The Stability of a Purified Granulosis Virus of the European Cabbageworm, <i>Pieris brassicae</i> , in Dry Deposits of Intact Capsules.....	228
ABDUL R. CHAUTHANI AND CARL S. REHNBORG. Dosage Mortality Data on the Nuclear Polyhedrosis Viruses of <i>Spodoptera exigua</i> , <i>Trichoplusia ni</i> , and <i>Prodenia ornithogalli</i>	234
C. L. MASSEY. Two New Genera of Nematodes Parasitic in the Eastern Subterranean Termite, <i>Reticulitermes flavipes</i>	238
ROBERT E. LYNCH AND LESLIE C. LEWIS. Reoccurrence of the Microsporidan <i>Perezia pyraustae</i> in the European Corn Borer, <i>Ostrinia nubilalis</i> , Reared on Diet Containing Fumidil B.....	243
WILLIAM T. WILSON. Resistance to American Foulbrood in Honey Bees. XI. Fate of <i>Bacillus larvae</i> Spores Ingested by Adults.....	247
J. V. BELL AND R. J. HAMALLE. A Bacterium and Dipterous Parasite in Wild Populations of Cowpea Curculio Larvae: Effects of Treatment with Spores of <i>Metarrhizium anisopliae</i>	256
ELI V. CRISAN. Mechanism Responsible for Release of Toxin by <i>Metarrhizium</i> Spores in Mosquito Larvae.....	260
RICHARD ZIPRIN AND PAUL A. HARTMAN. Toxicity of <i>Pseudomonas aeruginosa</i> Bacterins and Cell Walls to the Greater Wax Moth, <i>Galleria mellonella</i> ...	265
C. W. MCCOY, A. G. SELHIME, R. F. KANAVAL, AND A. J. HILL. Suppression of Citrus Rust Mite Populations with Application of Fragmented Mycelia of <i>Hirsutella thompsonii</i>	270
H. W. ROSSMOORE AND E. A. HOFFMAN. The Effect of ¹³⁷ Cs Radiation on Growth, Development, and Mortality of the Larvae of the Tussock Moth, <i>Hemerocampa leucostigma</i>	277

NOTES

H. W. ROSSMOORE AND E. A. HOFFMAN. The Effect of Gamma Radiation on Larval Resistance to <i>Bacillus thuringiensis</i> Infection.....	282
J. W. VANDERMEER AND T. A. GOCHNAUER. The Association of Lipoidal Materials with Spores of <i>Nosema apis</i>	284
ASHOK K. RAHEJA AND MARION A. BROOKS. Infective Hemolymph from Forest Tent Caterpillars Diseased by Nuclear Polyhedrosis Virus.....	286
HELA GITAY AND A. POLSON. Isolation of Granulosis Virus from <i>Heliothis armigera</i> and Its Persistence in Avian Feces.....	288
M. S. BRISCOE. A Survey of the Protozoan Fauna of the Cockroach <i>Blattella germanica</i>	291
EDWARD M. DOUGHERTY, CHARLES F. REICHELDERFER, AND ROBERT M. FAUST. Sensitivity of <i>Bacillus thuringiensis</i> var. <i>thuringiensis</i> to Various Insecticides and Herbicides.....	292

K. A. HARRAP AND T. W. TINSLEY. A Suggested Latinized Nomenclature of Occluded Insect Viruses.....	294
ALOYSIUS KRIEG. Use of Cryptograms for Characterization of Strains of the <i>Bacillus thuringiensis</i> / <i>Bacillus cereus</i> Group.....	297
JUNE STEPHENS CHADWICK. An Assessment of the Ability of Individual Moieties of <i>Pseudomonas aeruginosa</i> Endotoxin to Induce Immunity in Larvae of <i>Galleria mellonella</i>	299
P. G. FAST. Isolation of a Water-Soluble Toxin from a Commercial Microbial Insecticide Based on <i>Bacillus thuringiensis</i>	301
ANNOUNCEMENT.....	302

NUMBER 3, MAY 1971

CHARLES C. DOANE. Field Application of a <i>Streptococcus</i> Causing Brachyosis in Larvae of <i>Porthetria dispar</i>	303
DER-I WANG AND F. E. MOELLER. Ultrastructural Changes in the Hypopharyngeal Glands of Worker Honey Bees Infected by <i>Nosema apis</i>	308
JANINA KRYWIENZYK AND Y. HAYASHI. Specificity of Serological Cross-Reactions between Insect Viruses and Ribosomes.....	321
M. SHAPIRO AND C. M. IGNOFFO. Protein and Free Amino Acid Changes in the Hemolymph of <i>Heliothis zea</i> Larvae during Nucleopolyhedrosis....	327
ROSALIND HINDE. Maintenance of Aphid Cells and the Intracellular Symbiotes of Aphids in Vitro.....	333
BRUNO FELLUGA, VIVIANNE JONSSON, AND MARIANNE R. LILJEROS. Ultrastructure of New Viruslike Particles in <i>Drosophila</i>	339
D. K. HUNTER AND P. L. HARTSELL. Influence of Temperature on Indian-Meal Moth Larvae Infected with a Granulosis Virus.....	347
G. R. STAIRS AND BETH JAYNE ELLIS. Electron Microscope and Microfilter Studies on Infectious Nuclear-Polyhedrosis Virus in <i>Galleria mellonella</i> Larvae.....	350
A. SANNASI AND J. H. OLIVER, JR. Integument of the Velvet-mite, <i>Dinotrombium giganteum</i> , and Histopathological Changes Caused by the Fungus <i>Aspergillus flavus</i>	354
ERIC V. NELSON, JANICE MILSTEAD, AND JOVAN M. KULINČEVIĆ. Fatty Acids in Virus-Infected Worker Honey Bees (<i>Apis mellifera</i>).....	366
D. J. SUTHERLAND. A Hemocytic Disorder of the American Cockroach, <i>Periplaneta americana</i>	369
HAJIME SHIGEMATSU AND SHIROO SUZUKI. Relationship of Crystallization to the Nature of Polyhedron Protein, with Reference to a Nuclear-Polyhedrosis Virus of the Silkworm, <i>Bombyx mori</i>	375
P. V. VAIL, G. SUTTER, D. L. JAY, AND D. GOUGH. Reciprocal Infectivity of Nuclear Polyhedrosis Viruses of the Cabbage Looper and Alfalfa Looper	383
D. D. JENSEN. Vector Fecundity Reduced by Western X-Disease.....	389
DARRELL W. ANTHONY, HAROLD C. CHAPMAN, AND EDWIN I. HAZARD. Scanning Electron Microscopy of the Sporangia of Species of <i>Coelomyces</i> (Blastocladales: Coelomomycetaceae).....	395
W. A. L. DAVID, SUSAN ELLABY AND G. TAYLOR. The Stabilizing Effect of	

Insect Hemolymph on a Granulosis Virus Held in Darkness as Dry Films of the Intact Capsules.....	404
S. Y. YOUNG III AND J. S. LOVELL. Hemolymph Proteins of <i>Trichoplusia ni</i> during the Course of a Nuclear Polyhedrosis Virus Infection.....	410
H. D. BURGESS, ELIZABETH U. CANNING, AND JACQUELINE A. HURST. Morphology, Development, and Pathogenicity of <i>Nosema oryzaephili</i> n. sp. in <i>Oryzaephilus surinamensis</i> and Its Host Range among Granivorous Insects.....	419
Y. HAYASHI AND J. C. CUNNINGHAM. The Release of Viral Genome RNA from Virions of the Cytoplasmic-Polyhedrosis Virus of <i>Malacosoma disstria</i> by Acetone Treatment.....	433
NOTES	
STEPHEN C. AYALA. Gregarine Infections in the California Sandfly, <i>Lutzomyia vexatrix occidentis</i>	440
MARY M. HERMAN, MARJORIE JOHNSON, AND JAIME MIQUEL. Viruslike Particles and Related Filaments in Neurons and Glia of <i>Drosophila melanogaster</i> Brain.....	442
JOHN E. CUSHING, E. EDWARD EVANS, AND MARJORIE L. EVANS. Induced Bactericidal Responses of Abalones.....	446
M. SHAPIRO AND C. M. IGNOFFO. Elemental Analyses of Polyhedral Inclusion Bodies of the Cotton Bollworm, <i>Heliothis zea</i> , Nucleopolyhedrosis Virus.....	449
PETER P. SIKOROWSKI, JOE R. BROOME, AND GORDON L. ANDREWS. Simple Methods for Detection of Cytoplasmic Polyhedrosis Virus in <i>Heliothis virescens</i>	451
CARLO M. IGNOFFO. Intraperitoneal Injection of White Mice with Nucleopolyhedrosis Virus of the Beet Armyworm, <i>Spodoptera exigua</i>	453
ANNOUNCEMENT.....	455
ERRATUM.....	456
AUTHOR INDEX.....	457
SUBJECT INDEX.....	459

